

Ecosystems and Biomes

Biomes and Aquatic Ecosystems (pages 728–739)

Introduction (page 728)

Key Concept: It is mostly the climate—temperature and precipitation—in an area that determines its biome.

- A **biome** is a group of land ecosystems.
- All the ecosystems in a biome have climates and organisms that are similar.
- The climate of an area determines what plants grow there. The plants determine what animals live there. As a result, it's mostly the climate of an area that determines what the biome is.

Answer the following questions. Use your textbook and the ideas above.

1. A group of land ecosystems is called a(an) _____.
2. Is the following sentence true or false? All ecosystems in a biome have climates that are alike. _____

Rain Forest Biomes (pages 729–730)

Key Concept: One of the six major biomes that most ecologists study is the rain forest biome.

- Rain forest biomes include two types of rain forests. One type of rain forest is a temperate rain forest. Another type of rain forest is a tropical rain forest.
- A rain forest receives a lot of rain.
- Temperate rain forests are found in areas with moderate temperatures. Huge trees grow in temperate rain forests, including cedars and redwoods.

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- Tropical rain forests are found in regions near the equator. Many different plants grow in a tropical rain forest.
- In a tropical rain forest, tall trees form a leafy roof called a **canopy**. Shorter trees underneath the canopy form an **understory**.

Answer the following questions. Use your textbook and the ideas on page 330 and above.

3. Complete the table below about types of rain forests.

Types of Rain Forests	
Type of Rain Forest	Location on Earth
a. _____ rain forest	Areas with moderate temperatures
b. _____ rain forest	Regions near the equator

4. Shorter trees in a tropical rain forest form a(an)

_____.

5. Tall trees in a tropical rain forest form a leafy roof

called a(an) _____.

Ecosystems and Biomes**Desert Biomes** (page 731)

Key Concept: One of the six major biomes that most ecologists study is the desert biome.

- A **desert** is an area that receives very little rainfall. A desert receives less than 25 centimeters of rain per year.
- Deserts often have very hot days and very cold nights.
- Organisms that live in deserts must be adapted to a lack of rain and extreme temperatures. The saguaro cactus and Gila monster can live in such conditions.

Answer the following questions. Use your textbook and the ideas above.

6. Circle the letter of the name of an area that receives less than 25 centimeters of rain per year.
 - a. desert
 - b. forest
 - c. grassland
7. Is the following sentence true or false? Deserts often have very hot days and very cold nights. _____

Grassland Biomes (page 732)

Key Concept: One of the six major biomes that most ecologists study is the grassland biome.

- A **grassland** is an area where mostly grasses grow. Plants without woody trunks and stems also grow in grasslands.
- A prairie is a grassland found in the middle latitudes. The middle latitudes are regions midway between the equator and the North and South poles.

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- A **savanna** is a grassland in a region close to the equator. Shrubs and small trees can grow in a savanna.
- Many large grass-eating animals live in grasslands. Examples are elephants, bison (buffaloes), giraffes, and kangaroos.

Answer the following question. Use your textbook and the ideas on page 332 and above.

8. Draw a line from each term to its meaning.

Term	Meaning
grassland	a. a grassland found in a region close to the equator
prairie	b. an area where mostly grasses grow
savanna	c. a grassland found in the middle latitudes

Deciduous Forest Biomes (page 733)

Key Concept: One of the six major biomes that most ecologists study is the deciduous forest biome.

- A deciduous forest is a woods area made up mostly of deciduous trees.
- A **deciduous** (dee SIJ oo us) **tree** is a tree that loses its leaves in the fall and grows new leaves in the spring. Oaks and maples are deciduous trees.
- Temperatures in deciduous forests vary greatly during a year, with hot summers and cold winters.
- Animals that live in deciduous forests include wood thrushes, chipmunks, squirrels, foxes, deer, and black bears.

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Answer the following questions. Use your textbook and the ideas on page 333.

9. Circle the letter of each sentence that is true about a deciduous forest biome.
 - a. A deciduous forest is made up mostly of deciduous trees.
 - b. A deciduous forest has hot summers and cold winters.
 - c. Deer and black bears live in deciduous forests.

10. Is the following sentence true or false? A deciduous tree loses its leaves in the fall and grows new leaves in the spring. _____

Boreal Forest Biomes (page 734)

Key Concept: One of the six major biomes that most ecologists study is the boreal forest biome.

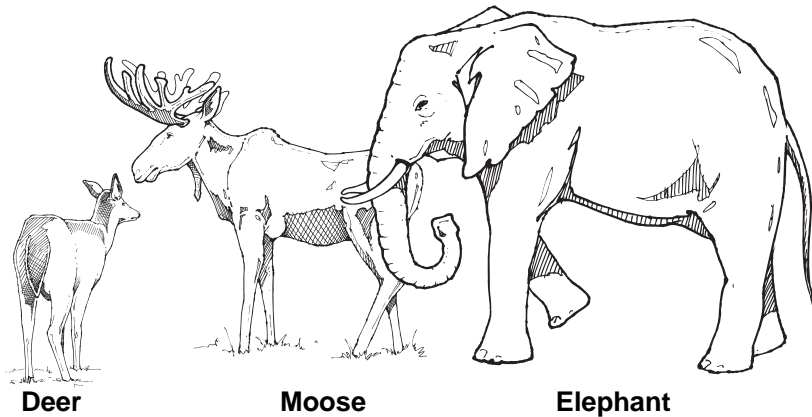
- Most of the trees in a boreal forest are coniferous trees.
- A **coniferous** (koh NIF ur us) **tree** is a tree that has seeds in cones and leaves shaped like needles. Pine, fir, spruce, and hemlock are coniferous trees.
- Winter is very cold in a boreal forest. Summers are warm and rainy.
- Animals that live in boreal forests include snowshoe hares, moose, great horned owls, bears, wolves, and lynxes.

Answer the following questions. Use your textbook and the ideas above.

11. Is the following sentence true or false? Most of the trees in a boreal forest are coniferous trees.

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12. Circle an animal that you might see in a boreal forest.



Tundra Biomes (page 735)

Key Concept: One of the six major biomes that most ecologists study is the tundra biome.

- A **tundra** is an extremely cold and dry biome.
- Most of the soil in the tundra is frozen all year. Soil that is frozen all year round is called **permafrost**.
- Tundra plants include mosses, grasses, shrubs, and very small trees.
- Tundra animals include insects, birds, caribou, foxes, wolves, and Arctic hares.

Answer the following question. Use your textbook and the ideas above.

13. Read each word in the box. In each sentence below, fill in the correct word or words.

boreal forest tundra permafrost

- a. A _____ is an extremely cold and dry biome.
- b. Soil that is frozen all year round is called _____.

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Mountains and Ice (page 736)

Key Concept: Some areas of land are not part of any major biome.

- Going up a tall mountain, you pass through many biomes. At the bottom might be a grassland. A deciduous forest and then a boreal forest might be farther up a mountain.
- The top of a mountain is like a tundra.
- Some areas of Earth are covered with thick sheets of ice. Greenland and Antarctica are covered with ice year-round.
- Animals that live in areas covered with ice include penguins, polar bears, and seals.

Answer the following questions. Use your textbook and the ideas above.

- 14.** Circle the letter of each sentence that is true about mountains.
- a.** A mountain has the same biome from top to bottom.
 - b.** The top of a mountain is like a tundra.
 - c.** As you climb a mountain, you might pass through a deciduous forest.
- 15.** Is the following sentence true or false? No animals live in areas that are covered with ice.

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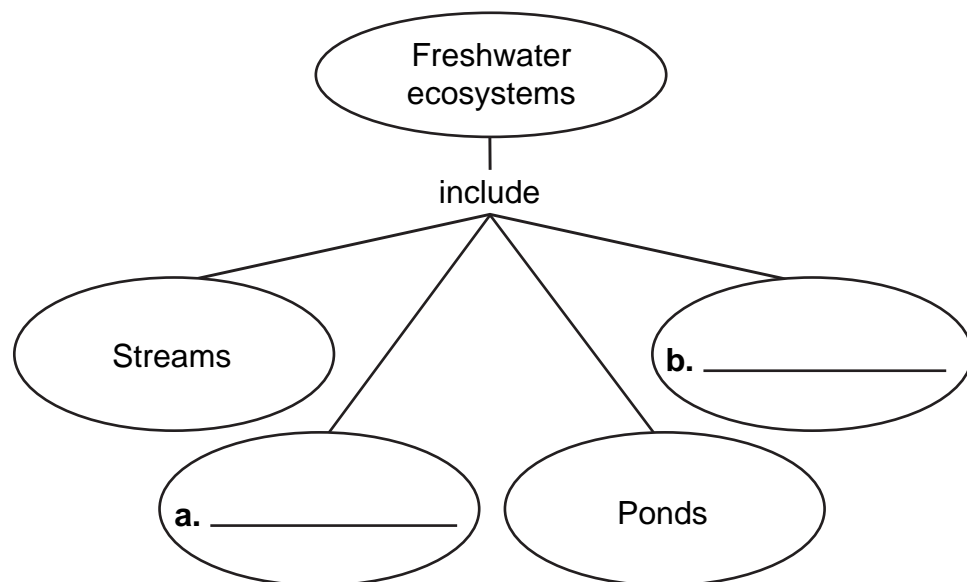
Freshwater Ecosystems (page 737)

Key Concept: Freshwater ecosystems include streams, rivers, ponds, and lakes.

- Freshwater ecosystems include streams, rivers, ponds, and lakes.
- Streams and rivers contain flowing water. Plants and algae are the producers that grow in rivers. Consumers that live in or by rivers include insects, fishes, and frogs.
- Ponds and lakes are bodies of fresh water. The water in a pond or lake is still water, which is also called standing water.
- Algae are major producers in lakes. Lake animals include fishes, dragonflies, turtles, snails, and frogs.

Answer the following questions. Use your textbook and the ideas above.

16. Complete the concept map about freshwater ecosystems.



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17. Circle the letter of each sentence that is true about freshwater ecosystems.
- Frogs are consumers that live by rivers.
 - Algae are major producers in lakes.
 - The water in a river is standing water.

Marine Ecosystems (pages 738–739)

Key Concept: Marine ecosystems include estuaries, intertidal zones, neritic zones, and the open ocean.

- Estuaries are found near ocean coasts. An **estuary** (ES choo ehr ee) is an area where fresh water and ocean salt water meet. Many animals use estuaries as places to breed and raise young.
- The ocean is home to a number of different ecosystems. They include the intertidal zone, the neritic zone, and the open-ocean zone.
- The **intertidal zone** is the area between the highest high-tide line and the lowest low-tide line. Clams and crabs are two kinds of organisms that live there.
- The **neritic** (nuh RIT ik) **zone** is the shallow ocean area near the coast. Coral reefs and many schools of fish can be found in the neritic zone.
- The open-ocean zone is the ocean out beyond the edges of continents. Light shines down through only a few hundred meters in the open ocean. This area is called the surface zone. The deep zone is the dark ocean below the surface zone.

Answer the following questions. Use your textbook and the ideas above.

18. An area where fresh water and ocean salt water meet is a(an) _____.

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19. Circle the letter of each zone in the open ocean.

- a. surface zone
- b. neritic zone
- c. deep zone

20. Complete the table below about types of marine ecosystems.

Types of Marine Ecosystems	
Type of Marine Ecosystem	Description
a. _____ zone	The area between the highest high-tide line and the lowest low-tide line
b. _____ zone	The shallow ocean area near the coast
c. _____ zone	The ocean out beyond the edges of continents